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United States Department of Agriculture | Forest Service | RO

Reply To: 3420 Pest Management Evaluations Date: November 29, 1984

Subject: Root Disease Evaluation of East and West Devils Creek Plantation, Zigzag Ranger District

To: Forest Supervisor, Mt. Hood NF

On November 16, Gregory M. Filip, Plant Pathologist from Forest Pest Management at the Regional Office, visited the Zigzag Ranger District. The purpose of the trip was to examine damage caused by laminated root rot in a 30-year-old Douglas-fir plantation. He was accompanied by Dave Hankin and John Davis from the District.

About 90 acres of Douglas-fir in the Devils Creek area are scheduled to be thinned in 1985. A walk-through of some of the area revealed several small mortality centers caused by Phellinus weirii. The plantation is composed almost entirely of Douglas-fir and red alder. Some of the firs are over 10 inches DBH, especially along Devils Creek.

Laminated root rot is a particularly serious disease in Douglas-fir plantations. Infection typically originates from stumps from the previous stand. As roots from regeneration contact infected stumps, the pathogen spreads along root surfaces, killing, then decaying the roots. Seedlings may be killed within 1 year when the mycelium reaches the root collar. Mature trees may take 50 or more years to succumb and commonly windthrow rather than die standing. Large infected stumps are capable of transferring disease for at least 30 years. Douglas-fir, Pacific silver fir, and grand fir are highly susceptible to infection and mortality. Western hemlock and noble fir readily become infected, but frequency of mortality is less than with Douglas-fir. Western redcedar, white pine, and lodgepole pine may become infected but rarely die. Alder and other hardwoods are immune to infection.

We recommend that the 90-acre area be surveyed for extent and distribution of root disease. These results may have a profound impact on precommercial thinning operations. For instance, densely stocked areas of healthy trees may be thinned as normal. However, mortality centers, plus a 50-foot buffer, should not be thinned, because it is almost impossible to insure that residual trees are uninfected. If disease pockets are isolated and active, it may be possible to patch-cut each pocket and plant tolerant or resistant conifers or hardwoods. It appears, however, that mortality centers are numerous, small, and well distributed over much of the plantation, in which case it may be impractical to

mark and treat each pocket. A thorough survey will clarify the distribution of root disease and thus aid in determining which, if any, areas should be thinned. FPM pathologists could perform the survey in spring or early summer of 1985.

If FPM can be of further service, please contact us.

PAUL E. BUFFAM

PAUL E. BUFFAM, Director
Forest Pest Management

cc:
Dave Hankin, Zigzag RD

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